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Method and System for Processing a Message in a Mobile Computer Device

Cross Reference To Related Application

This application claims the benefit of International Application No. PCT/CA03/00182, filed on February 7, 2003, the entire disclosure of which is incorporated herein by reference.

Field of the invention

[0001] This invention relates to mobile computer devices, and more specifically to the processing of messages displayed in such devices.

Background of the invention

[0001] Mobile computer devices are widespread in present-day society, and include small, hand-held electronic devices such as personal data assistants (PDA's), personal information managers (PIM's), two-way pagers and the like. With the proliferation of such mobile computer devices, the demand for wireless access to computer networks using these devices has increased. For example, many hand-held electronic devices, such as the BlackBerry 6710 Wireless Handheld™ from Research in Motion, Inc., Waterloo, Ontario, are configured for wireless Internet access.

[0003] The portability of such electronic devices coupled with their ability to wirelessly access the global Internet has made international communication more extensive than ever. Along with the advantages inherent in such

communication capabilities, problems have arisen associated with the exchange of information between disparate computer networks.

[0004] When a packet originating in a first network is sent to the mobile computer device via several other foreign networks, many problems can arise at the interfaces. Protocol and address conversions, and error, flow and congestion control are just some of the issues that must be addressed in the interface between different computer networks if communication is to occur. These interface issues occur at the computer level.

[0005] Paralleling these issues in mobile computer devices, which involve the exchange of information between different computer networks, is the exchange of information between humans who speak different languages. For example, an English speaking person carrying a mobile computer device may download a French Web page using wireless technology. Despite the impressive technology required to achieve such a download, if the English speaking person does not understand French, then communication breaks down at the human level.

Summary of the invention

[0006] The present invention addresses the problem that arises when a user of a mobile computer device capable of wireless transmission receives text written in a foreign language. Program instructions in the mobile computer device allow the user to translate the foreign language text displayed by the device into a language that is understood by the user. The translation is

achieved by transmitting the text to a server on a computer network that translates the text. The server then sends the translated text back to the mobile computer device.

[0007] More specifically, a system for translating text that is displayed in a first language in a mobile computer device capable of wireless access to a computer network is described herein. The system includes a translation menu option module in the mobile computer device. The module contains program instructions for presenting a menu option to a user of the device for translating the text. The system also includes a transmitter for wirelessly sending a representation of the text to at least one server on the computer network to translate the representation of the text into a second language. The system further includes a receiver in the mobile computer device for receiving a second representation of the translated text. The mobile computer device can then display the translated text.

[0008] Besides translation, other types of processing, such as encryption, can also be performed in a similar manner. In particular, a system is described herein for converting an initial message residing in the mobile computer device into a processed message. The system includes a menu option module in the mobile computer device. The menu option module includes program instructions for presenting a menu option to a user of the device for converting the initial message into the processed message. The system also includes a transmitter for wirelessly sending a representation of the initial message to at least one

server on the computer network for converting the representation of the initial message into the processed message. The system further includes a receiver in the mobile computer device for receiving a representation of the processed message from a particular one of the at least one server.

[0009] Additionally, a computer-readable medium is described herein having recorded thereon a program for execution by a processor in a mobile computer device capable of wireless access to a computer network. The program serves to convert an initial message residing in the device into a processed message. In particular, the program includes instructions for presenting a menu option to a user of the device for converting the initial message into the processed message, and, after the user selects the menu option to convert, wirelessly sending a representation of the initial message to at least one server on the computer network for converting the representation of the initial message into the processed message. The program also includes instructions that allow the mobile computer device to receive a representation of the processed message from a particular one of the at least one server.

Brief description of the drawings

[0010] For a better understanding of the present invention and to show more clearly how it may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:

[0011] Figure 1 shows a system for converting an initial message residing in a mobile computer device into a processed message, in accordance with the principles of the present invention;

[0012] Figure 2 shows menu options provided by the menu option module of the system of Figure 1;

[0013] Figure 3 shows a system for translating text that is displayed in a first language in a mobile computer device, in accordance with the principles of the present invention;

[0014] Figure 4 shows a pop-up having translation characteristic options, in accordance with the principles of the present invention; and

[0015] Figure 5 shows a flow chart for converting an initial message residing in a mobile computer device into a processed message, in accordance with the principles of the present invention.

Detailed description of the invention

[0016] Figure 1 shows a system 10 for converting an initial message residing in a mobile computer device 8, such as text displayed by the device 8, into a processed message. The mobile computer device 8 is capable of wireless access to a computer network 12. The system 10 includes a menu option module 14, a transmitter 16 and a receiver 18.

[0017] The menu option module 14 in the mobile computer device 8 includes hardware and software for presenting a menu option to a user of the

device for converting the initial message into the processed message. In particular, the menu option module 14 includes program instructions for presenting the menu option to the user.

[0018] The transmitter 16 wirelessly sends a representation of the initial message to at least one server 20 on the computer network 12. The at least one server 20 converts the representation of the initial message into the processed message. The receiver 18 in the mobile computer device 8 receives the processed message, or a representation thereof, from the at least one server 20.

[0019] For example, the initial message can be text in a first language. The mobile computer device 8 can transform the text into a representation suitable for wireless transmission. For example, the text (initial message) can be converted into a digital signal (representation of the original message) for wireless transmission. The at least one server 20 can translate the representation of the text into one translated into a second language. The at least one server 20 includes all the software and hardware required to receive the representation of the text, and to convert it to translated text (processed message), or a representation of the translated text (such as a digital signal suitable for wireless transmission).

[0020] In one embodiment, the at least one server 20 includes a proxy 22 and a processing server 24, the representation of the original message being sent first to the proxy 22 and then to the processing server 24. The proxy 22 converts the representation of the message into a new format, such as hypertext

markup language (HTML), before sending the reformatted representation of the message to the processing server 24 for further processing. The processing server 24 can be a translation server, such as Babelfish™, an encryption server, such as one that provides Pretty Good Privacy (PGP) encryption, and/or a spell check/thesaurus server, such as that found at http://dictionary.reference.com/ (an alias for www.websters.com).

[0021] Instead or in addition, the representation of the processed message can be received by the receiver 18 via the proxy 22 in the computer network 12. In such case, the proxy 22 converts the processed message from the processing server 24 into a device-formatted representation of the processed message before sending to the receiver 18.

[0022] The use of a proxy 22 frees up processor time in the mobile computer device 8 by outsourcing to the proxy 22 tasks such as converting to HTML before sending to the processing server 24, and/or converting to mobile computer device format prior to sending to the receiver 18.

[0023] The initial message can be text displayed on the mobile computer device 8 in a first language. The text can form part of an email or a Web page. The system 10 can include a checking module 25 for automatically checking to determine whether the initial message corresponds to text in a language that is not native to a user of the mobile computer device. If the checking module 25 determines that the text is in a non-native language, the checking module 25 can

automatically prompt the user to determine if the user wishes the text to be translated.

[0024] Figure 2 shows menu options provided by the menu option module 14. When the user selects the conversion menu 26, several menu options are displayed to the user. The menu option can include a translation option 28, an encryption option 30, a spell check option 32 or a thesaurus option 34. Selecting the translation option 28 can cause a pop-up (not shown in Fig. 2) to be displayed. The pop-up prompts a user of the mobile computer device 8 to choose at least one translation characteristic option, as described in more detail below.

[0025] Figure 3 shows a translation system 50 for translating text that is displayed in a first language in a mobile computer device 51 consistent with the principles of the present invention. The mobile computer device 51 is capable of wireless access to a computer network 12, such as the Internet. The system 50 includes a translation menu option module 52, a transmitter 54 and a receiver 56.

[0026] The translation menu option module 52 has program instructions for presenting a menu option to a user of the device for translating the text. The transmitter 54 wirelessly sends a representation of the text to at least one server 20 on the computer network 12 to translate the representation of the text into a second language. A receiver 56 receives a second representation of the translated text.

[0027] The user can highlight the text to be translated. An inputting module 58 allows the user to issue a command to translate the highlighted text. For example, the inputting module 58 can include the thumb-operated trackwheel found in the aforementioned BlackBerry 6710 Wireless Handheld™. The trackwheel allows the user to highlight text and issue commands for translating. The translation menu option module 52 can input the request to translate and output a pop-up having one or more translation characteristic options.

[0028] Figure 4 shows a pop-up 60 having translation characteristic options. The pop-up 60 can be displayed to the user after the user chooses the translation option 28 in the conversion menu 26. The translation characteristic options can include a first language option 62 to choose the first language in which the original textual message is written, and a second language option 64 to choose the second language into which the textual processed message is to be displayed on the mobile computer device 8. The highlighted text can be part of an email or Web page.

[0029] Figure 5 shows a flowchart for converting an initial message residing in a mobile computer device capable of wireless access to a computer network into a processed message. In step 100, a menu option is presented to a user of the device for converting the initial message into the processed message. Program instructions for presenting the menu option originate in the mobile computer device. After the user selects the menu option to convert, in step 102, a representation of the initial message is wirelessly sent to at least one server on

the computer network for converting the representation of the initial message into the processed message. In step 104, the mobile computer device receives a representation of the processed message from a particular one of the at least one server.

[0030] It should be understood that various modifications could be made to the embodiments described and illustrated herein, without departing from the present invention, the scope of which is defined in the appended claims. Although emphasis has been placed on translating text from one language to another, other forms of data processing fall within the scope of the invention. For example, mention has been made of encryption, spell check and thesaurus processing. Other examples include sorting, grammar checking, and format conversion. The initial messages processed can include data files of various sorts and need not be only files associated with text.